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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,726	03/19/2004	Peter L. Montgomery	MS1-1245US	8255

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LEE & HAYES PLLC  
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SPOKANE, WA 99201

EXAMINER
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MAI, TAN V

ART UNIT	PAPER NUMBER
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2193

MAIL DATE	DELIVERY MODE
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09/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/804,726

Applicant(s)

MONTGOMERY, PETER L.

Examiner

Tan V. Mai

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-27 and 29-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Rejection grounds continue to be those set forth in the previous office action (Paper dated 5/23/07, paragraph 3).

4. Claims 1-3, 8-10, 20-22, 27, 29 and 34-36 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by applicant's BACKGROUND.

Rejection grounds continue to be those set forth in the previous office action (Paper dated 5/23/07, paragraph 5).

5. Applicant's arguments filed on 7/20/07 have been fully considered but they are not persuasive.

Applicant, in his remarks, argues that:

(1) "[t]he specification specifically points out that the multiplication of two polynomials (or integers) efficiently is a key in a variety of practical applications. Examples of such fields include: signal processing, cryptography, and digital security systems. Further, the independent claims make clear that an output is reported. Clearly the claims are directed towards statutory subject matter, especially if read in light of the specification. Applicant respectfully submits that these claims comply with the patentability requirements of § 101 and that the § 101 rejections should be withdrawn"

(2) "[t]he background clearly does not disclose obtaining two input polynomials, each with degree 5, and computing a product polynomial of the input polynomials, wherein the total number of coefficient multiplication operations is fewer than or equal to seventeen. Instead, the 'classic schoolbook' way to multiply two univariate polynomials of degree at most  $n-1$  (i.e., with  $n$  terms each, some of whose coefficients may be zero) needs  $n^2$  multiplication of coefficients. As such, a degree 5 polynomial would require 25 multiplications. Clearly this result is greater than the claimed 17"; and

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(3) “[I]t appears that independent claims 35 and 36 were not addressed at all in the outstanding office action as the cited portion of the background clearly does not discuss logarithms. Applicant asks for further clarification regarding the reason for rejecting claims 35 and 26 as the background clearly does not anticipate the current claims” (emphasis added).

With respect to the arguments, the examiner carefully reviews Applicants' specification, and the applied reference.

**First**, it is noted that applicant hasn't pointed out how/why the claim produces a **useful, concrete, and tangible result**. If the claim as a whole is reasonably interpreted as just solving a mathematical algorithm rather than reciting a practical application of the algorithm which produces a **useful, concrete and tangible result**, then it would be non-statutory. It is noted that the “results” in “reporting results” step is not a tangible result because it is not a real-world result. Is it displayed in the screen or stored in the memory? What is the practical of the results?

**Second**, it is clearly that background could be expand to “two input polynomials, each with degree 5”. If the coefficients  $a_0$ - $a_4$  and  $b_0$ - $b_4$  are **ZEROS**, then the “degree 5 polynomial” requires less than the “claimed 17”.

**Third**, it is noted that the claimed features are merely reduce the “coefficient multiplication operations” (see Applicant's specification, pages 20-21). In the case most of the coefficients are ZEROS (see explain the preceding paragraph), the background read on the claimed features.

Therefore, the rejections are still proper.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An, can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is:

Official (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

  
Tan V. Mai  
Primary Examiner